

Vol. 13, No. 9 TAMPA, FLORIDA, SEPTEMBER, 1932 15 Cts. a Copy

You will find in this issue many articles of unusual interest to the citrus growers of Florida.

## The Citrus Industry

serves this group exclusively and carries Florida's most complete resume of citrus information every month in the year.

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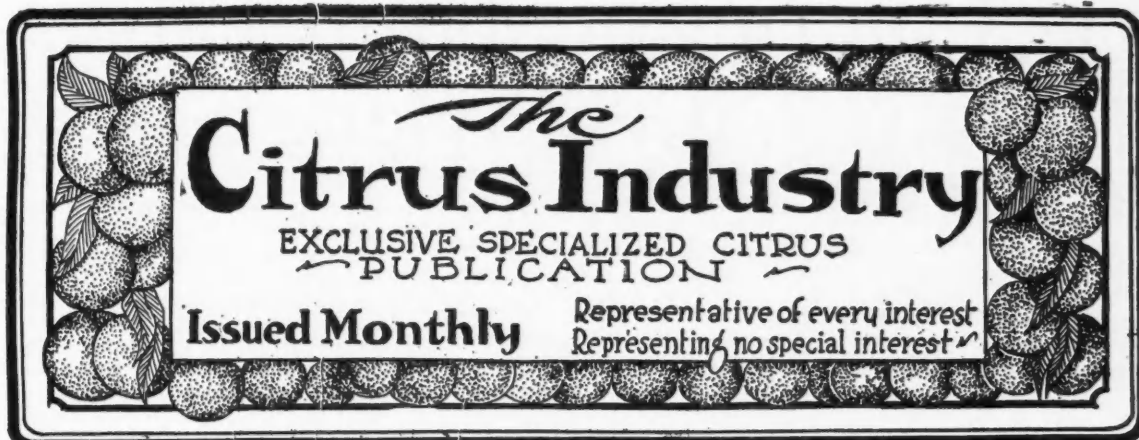
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Vol. 13

TAMPA, FLORIDA, SEPTEMBER, 1932

No. 9

# Lyons Forecast 1932-33 Florida Citrus Crop, 19,800,000 Boxes

For the past eight years C. W. (Joe) Lyons' annual crop estimate has proven the most accurate of any of the varied estimates which are submitted each season. Only once during the period mentioned has Mr. Lyons' estimate been more than 500,000 at variance with the final season check-up, so the following article written by Mr. Lyons is of more than usual interest.

By C. W. Lyons

Following a custom of some years back of making an estimate of the citrus crop of Florida, I am again doing so this year, and have come to the conclusion after observation and investigation, that this year's citrus crop will amount to 19,800,000 boxes, being divided as follows: 11,300,000 boxes of oranges, 7,100,000 boxes of grapefruit, 1,400,000 boxes of tangerines. This estimate is for the commercial citrus crop of Florida figured on the net amount of fruit to be shipped.

In my opinion the shipping season will be quite prolonged this year for the reason of the variation in which the trees bloomed and there will probably be more "spot picking" this year than ever before; and if properly marketed, in spite of the low buying power of last season, but for which we look for an improve-

ment this year, this crop should bring quite satisfactory returns to the grower and of course the grower is the one that should be considered, inasmuch as through his combined efforts in producing the citrus crop of fruit in Florida, the commerce of this state is dependent on his efforts to the extent of at least fifty per cent.

There are so many deals or businesses where the setup of the picture looks fine, and this is particularly true from the standpoint of a picture that we can make of the citrus industry. In my opinion it is also true that there is no agricultural or horticultural deal in this country that compares with the enormous possibility of the citrus industry, and what it should mean to the grower. For nearly eighteen years I have been in this picture and from my observation during this period of time it seems to me that unless California or we ourselves, have had some catastrophe, the price returns to the grower have never been what they should be; and of course, this is brought about by our failure to successfully market our citrus crop in a practical businesslike manner.

There are several contributing factors, and we all have our responsibility together, but the thing that we must do is to first advertise our citrus fruit, and second to ship to market the amount of fruit that the market will definitely absorb, such as any

manufacturing and distributing concern would do with their products, irrespective of what product it is, but to a greater extent, as our distribution is national in scope. Added to this will say with emphasis, that cull fruit should never find its way to market, for when it does it simply means that it is always in competition with the better grades of fruit; and here is where the grower can play a very important part, by seeing to it that this fruit is not shipped out of the state.

It is hoped that on account of the lateness of the bloom that our fruit will not be rushed to market before it is matured. In this connection, if the grower will put himself on the receiving end of the line, buying the fruit, I am sure that he would not consent to accept fruit unfit for consumption or of poor quality.

I was indeed interested in an article of the "Sunkist Courier" published in the California Citrograph, of the tremendous amount of oranges used for juice every year. Will quote this article as follows:

## "Squeezing A Billion Oranges A Year"

"That the fountain industry last year consumed 1,231,692,000 oranges figuring 200 oranges to the box, is the conclusion reached through a survey of fresh fruit orange and lemon drinks conducted by the California Fruit Growers Exchange. This re-

(Continued on page 25)

# The Coloring of Mature Citrus Fruits With Ethylene Gas

By J. R. Winston, Senior Horticulturist and R. W. Tilden, Formerly Field Assistant, Division of Horticultural Crops and Diseases

In Florida, some of the early oranges such as the Parson (Parson Brown) mature before they develop their color or at least their full color. Citrus fruit of any variety growing on densely foliated trees and shaded by the foliage, such as an inside crop of grapefruit, retains much of its greenness even after maturity. In both Florida and California, Valencia oranges develop almost full color in winter and become mature in the spring but have a habit of re-greening, particularly at the stem end when spring growth sets in, if allowed to remain on the tree until fully ripe. Late varieties of grapefruit sometimes remain green in the spring and need to be put through the coloring treatment. It is highly desirable to make the appearance of the fruit match its eating quality throughout its marketing season.

The term "coloring" is somewhat ill-chosen. It conveys the erroneous impression of attempting to conceal inferiority. In reality, "coloring" is merely a stimulation of natural processes. The presence of the coloring agent under favorable conditions hastens the natural breaking down of the green pigment in the peel, thereby making a good, legally mature fruit look better. The destruction of the green chlorophyll reveals the previously hidden yellow or orange pigments. There is no actual coloring other than possible a slight intensification of the orange-yellow pigments. "Coloring" is more of a blanching or decoloring process involving the use of a harmless gas of the unsaturated hydrocarbon series.

## Factors In Coloring

The two major factors in citrus fruit coloring are the fruit itself and the coloring treatment.

The manner in which fruit responds to treatment depends very largely upon its innate quality, its texture, the way it has been fertilized, the stock upon which it is grown, etc. A thin skinned, fine-textured fruit such as the Pineapple orange, grown on rather heavy soil, colors much better and more easily than

coarse-textured fruit of the same variety grown on poor soils. Sour-orange stock usually produces fruit of better color than that grown on rough-lemon stock. Fruit from well fertilized trees that have had sufficient potash and phosphoric acid without an excess of nitrogen assumes a richer and deeper color when mature than fruit from a starved tree; furthermore, it colors more readily than fruit from trees with rank green foliage developed by fertilizing principally with nitrogen.

There are four main elements in the coloring treatment; the equipment, the coloring agent, the atmospheric conditions, and the time required for coloring. The coloring agent employed is either Ethylene gas or the pungent fumes from the incomplete combustion of kerosene oil variously administered. Atmospheric conditions, or more specifically, temperature, relative humidity, ventilation, and circulation of air need to be controlled so as to maintain what might be called a healthful, stimulating environment. The time required for coloring usually varies from one to three or four days, or even longer, depending upon the quality of the fruit, the equipment, and the way it is handled.

## Equipment

Loosely constructed and uninsulated rooms can be used during warm, damp weather provided the temperature is not allowed to go too high and the doors are opened several times each day for a thorough airing out or ventilation. During cold weather when artificial heat must be supplied great difficulty is encountered with rooms of this type because of the impossibility of maintaining desirable temperatures. Unless a reasonably uniform temperature can be maintained throughout the room there will be a lack of uniformity in the rate of coloring and it may be necessary to treat some of the fruit for excessively long periods. It is desirable however to shorten the coloring process as much as practicable because the high temperatures and humidities which are required are very favorable to the development of stem-end rot and other types of decay.

The greatest practical progress in

the development of improved coloring practices has come since 1929, when a large number of well insulated rooms were constructed. These were especially equipped with air-conditioning apparatus in order to maintain the fruit under uniform conditions of temperature and humidity regardless of outside weather conditions during treatment. Rooms of this type have proved to be admirably adapted for coloring purposes and have now very largely supplanted the earlier types of construction throughout Florida.

The air-conditioning chamber is located outside of the room, usually overhead. Within the chamber are a steam radiator and a live-steam opening with a baffle for removing the larger particles of water from the several coarse water-spray nozzles. Besides these there is often a single fine water-spray on a separate line. The latter nozzle is usually of the type commonly used in grove spraying. The radiator or steam coils furnish the dry heat. In the better rooms a thermostatic control is used for regulating the flow of steam into the radiator or in rooms containing no radiator for regulating the flow into the live-steam outlet. This tends to keep the radiator hot and is an objectionable feature in hot weather. The difficulty can be avoided however by placing a cut-off valve between the thermostat and the radiator. A trap in the return steam line from the radiator to the boiler is very desirable since it helps to save fuel. The live-steam jet furnishes both heat and humidity.

The comparatively high humidity prevalent in Florida renders coarse water-spray equipment for reducing temperature less efficient than in arid climates; nevertheless the battery of sprays just mentioned is efficient in absorbing heat from the air when it is necessary. In this way the desired reduction of temperature can be brought about even in the most humid weather if water can be used which has a temperature well below that of the air or the fruit. A drain must be provided to carry off the used water. The fine-water spray is an efficient adjunct for building up and maintaining any desired humidity.

ty within the coloring rooms when the weather is too hot to use live steam for this purpose. The finer the spray the more efficient it is for humidifying the air. However, such a small amount of water is used that this single spray can not be relied upon to reduce undesirably high air temperatures.

The need for the water-spray equipment in Florida is not generally appreciated because few realize how low the relative humidity is at mid-day during the rainless periods of late spring and early fall. Between 30 and 40 per cent is not uncommon and sometimes it drops into the twenties or even lower.

A powerful fan, commonly of the multivane type, to circulate the air is connected with the chamber. A slide in the chamber behind the fan regulates the intake of fresh air. The fan blows the air from the chamber through ducts or against a spreading baffle and out over the ceiling of the coloring room. The conditioned air then passes downward through the fruit to a space between a false floor and the subfloor. It is then carried back up the wall through a duct and through the conditioning chamber again. There are a number of methods of returning the air to the chamber. One of the most common consists of the use of radiating floor joists that feed into a duct which is built against or within one of the side walls, and leads up to the air-conditioning chamber. However, radiating studs in the wall are sometimes substituted for the radiating floor joists. In some methods the subfloor is dropped to leave an open space beneath the joists, the wall duct drawing from this. In other methods, a suction duct crosses the floor joists and takes air from the spaces between the false floor and underfloor. In any case it is desirable to have a positive and uniform air circulation. This should be accomplished in the most direct, efficient manner, with a minimum of friction and of exposed duct surface outside of the room. In a room of one-carload capacity, usually between 2500 and 3000 cubic feet, an actual delivery of at least 2000 cubic feet of air per minute is desirable, but 3000 cubic feet per minute warms the load quicker, maintains a more uniform temperature and is regarded as standard under Florida conditions.

In most cases the fan is placed so that it blows directly into the coloring room from the chamber. In other cases it is connected behind the chamber, blowing the air from the floor through it.

The type of construction of the coloring room is of more importance than might be supposed. With insufficient insulation there is a costly loss of heat; on the other hand, rooms constructed mainly with the idea of conserving heat are likely to be so tight that adequate ventilation is not accomplished unless they are equipped with exhaust vents as well as openings for the intake of fresh air. The importance of an adequate supply of fresh air can hardly be over estimated. Celotex or materials of that nature are excellent for lining the coloring room because decay of the fruit is usually less where such porous materials are used in room construction. For best general results the ceiling should be about seven and one-half or eight feet above the false floor so that there can be a space of two and one-half or three feet between the ceiling and the top of the stack of boxes. Long narrow rooms usually are entirely satisfactory. As a general rule a coloring room should not be more than fifty per cent longer than broad. Square rooms are perhaps the best, when considered from the standpoint of temperature control.

The use of hydrometers and thermometers is necessary to operate coloring rooms properly. The hydrometer affords the most essential index to conditions within the room and is ordinarily placed so as to be in a sufficient air draft in the room, yet convenient for reading from outside through a glass window. The simple Mason type hydrometer does as well as any other if kept clean. Recording instruments which are sometimes used are not only expensive but have not proved entirely satisfactory.

#### Coloring Agent

Ethylene gas gives good results when used at the rate of about 3 or 4 cubic feet, or even somewhat less, per carload room per day. The minimum satisfactory dose has not been established. However, no more gas should be used than will satisfactorily color the fruit, as a superabundance of ethylene, particularly when accompanied by insufficient ventilation, is likely to stimulate decay.

There are two common methods of introducing this gas into the coloring rooms; intermittent charges at intervals of several hours, and a continuous flow.

For best results from the intermittent method the interval between charges usually results in a markedly slower rate of coloring. Several satisfactory types of meter gauges are available for use in applying ethylene in charges.

The introduction and regulation of

ethylene under continuous flow is accompanied by two reducing valves attached to the high pressure cylinder in which the gas is purchased. The gas flow is usually reduced to a pressure of only a fraction of a pound and is conducted through a quarter inch main-line pipe with laterals leading into the air-conditioning chamber of each coloring room. At the discharge end of each lateral pipe there is a nozzle with a cut-off to enable one to turn the gas on or off from a given room without affecting the operation of other rooms. The gas is turned on when the room is filled with the fruit and is left on until the coloring is completed. Although the pressure in the cylinder may vary considerably the pressure on the line remains constant. When a set of nozzles with uniform sized orifices is used and the gas pressure is kept constant, the rate of delivery is practically uniform. The rate can be changed by simply changing the pressure on the line, a matter of adjusting one screw. Being thoroughly mixed with the air before its introduction into the coloring room, the gas is applied in uniform concentration at all times. This is known as the "trickle method" of using ethylene gas in coloring citrus fruit.

Kerosene fumes, sometimes used in coloring fruit, are in no way superior to ethylene. In the past, when fruit coloring was done far differently, superior merits were usually attributed to kerosene fumes. These have since been found to be due to the abundance of fresh air blown into the coloring rooms along with the kerosene fumes. Kerosene fumes may impart a bad flavor to thin-skinned fruit, and in the case of tangerines not only flavor may be affected but decay may be increased also.

(Concluded next issue)

#### CAN CHICKEN IN TINS

Fifty tin cans of chicken were recently canned by the Clearwater Home Demonstration Club at a cost of 18½ cents per No. 2 can, reports Mrs. Joy Belle Hess, home demonstration agent. The chickens were bought for 12 cents per pound. Chicken gumbo, chicken and noodles, and canned boned chicken were made.

After all cotton is picked, destroying the stalks will help to prevent disease and boll weevil infestation next season.

Press bulletin 324 of the Florida Experiment Station, Gainesville, tells about fumigating for the corn weevil.



# Texas and Florida Grasp Hands In Marketing

## From Texas Citriculture

Plans for the broadest concerted marketing ever attempted in the citrus industry are under joint discussion by Texas and Florida shippers and officials of the agricultural departments of these states. The main objective is to eliminate undue and pernicious competition in the marketing of grapefruit. To this end it is proposed, as one of the important features of the plan, that Texas and Florida shippers exchange information daily in regard to tonnage shipped and ready to ship, destinations and numerous other pertinent matters, the data to be used for guidance in avoiding over-supplies of fruit in certain markets. It is well known that even as small a surplus as one or two carloads will often break down the entire price structure.

Information of the kind outlined has for a number of years been available to the members of Florida Citrus Clearing House Association, and it is proposed to organize a similar association in the Texas citrus section as a first step toward carrying out the interstate marketing plan. The matter was discussed in detail by members of the Lower Rio Grande Valley Shippers' Association at a recent meeting called by Secretary C. D. Wallace, who gave the plan his hearty personal support. The approval of most of the shippers present was no less hearty, and a like attitude has been indicated by officials of Lower Valley citrus cooperative associations.

The general favorable reception for the proposal has been due not only to recognition of the need for comprehensive and accurate marketing information, but also to the success of the Florida Citrus Clearing House Association, which is credited with being highly profitable to its large and influential membership. Its staff collects facts throughout the Florida citrus sections bearing upon tonnage and grades of fruit for shipment, destinations, car diversions en route, traffic matters, weather conditions in consuming centers, credit ratings of consignees, prices and price trends, present and prospective supplies in the markets and other data of value in effective marketing.

A highly important function of the Clearing House has to do with pro-rata among shippers of the number of cars of fruit allowed to be shipped before the fruit is sold. If a carload already has a buyer there is no restriction on its shipment, but strict control is maintained over those not yet purchased. They can be started rolling only when cleared by the organization in accordance with the tonnage of the shipper and the state of the markets. The purpose, of course, is to prevent market glutting and consequent disaster to prices.

The operating expenses amount to about \$200,000 per year, which is covered by a charge of a cent a box on all shipments by members. While the aggregate cost seems large from the present viewpoint of Texas citrus growers, it has been pointed out that the Association's activities have increased the returns per box by impressive multiples of one cent, the increase at times being as much as a dollar a box.

But the work is becoming less potent than it was because of the growing volume of Texas grapefruit in the markets. Broader measures are now desirable to minimize market over-crowding. Hence the call by shippers in both states for a common marketing plan. California and Arizona shippers will be asked to participate, but it felt that the immediate need is for an arrangement between the citrus interests of the two states, Texas and Florida, producing grapefruit which is offered in close competition in the same markets.

In addition to a Texas clearing house association operating in unison with the one in Florida, a third organization of this kind is in contemplation. Its function would be to act as an intermediary between the other two, or as a sort of super-clearing body, located in some central city like St. Louis or Chicago and regulating shipments from such a unified grasp of the requirements of shippers in Texas and Florida and a close knowledge of all markets.

In furtherance of the general plan, arrangements are being made for a meeting between A. M. Pratt, manager of the Florida Citrus Clearing

House Association, C. C. Commander manager of the Florida Citrus Exchange and Texas shippers, including independents and officials of cooperative associations. The Florida Citrus Exchange is cooperative. It and the Clearing House Association control about ninety per cent of the citrus fruit shipped from Florida. The intention is to hold this meeting within a few weeks in New Orleans. It is stated that the Hon. J. E. McDonald, Texas Commissioner of Agriculture, and the Hon. Nathan Mayo, Florida Commissioner of Agriculture, will attend the New Orleans conference and will lend the weight of their support to the movement.

The progress made thus far has been largely due to the zealous work of W. A. Cannon, Chief of the Marketing Division of the Texas State Department of Agriculture, Gray Singleton, Chief Laboratory Supervisor at Winter Haven, Florida, of the State Agricultural Department, and Secretary Wallace of the Lower Rio Grande Valley Shippers' Association. Mr. Singleton, who made many friends during several weeks recently spent in the Lower Valley returned to Florida late in August to continue work for the plan in his own state.

Though officials and shippers in Florida have been at the forefront in advocating the plan, it originated in Texas. According to authentic information it received its initial impulse from Commissioner McDonald. Toward the end of the last shipping season, when it was necessary to move a large quantity of Texas citrus into the markets without delay, he communicated with Commissioner Mayo in Florida and suggested that a substantial reduction in Florida grapefruit shipments during the marketing emergency here might prove helpful to all concerned. Commissioner Mayo took steps for full cooperation, with the result that the growers of both states obtained considerably better prices for grapefruit than would have been possible if there had been strong selling competition between them at that time.

The success of this first essay at concerted marketing by the citrus

(Continued on page 20)

# Palestine Citrus Industry

In a report to the Department of Commerce, Mr. G. E. Luebben, American Fruit Trade Commissioner, states that citrus fruit has been grown in Palestine for many years. Exports of citrus fruit from Palestine originated in the early part of the 19th century, when oranges were shipped, in bulk, to Egypt, in sailing vessels. The orange export trade with England was begun later by Greek merchants, continuing with them until the advent of Jewish settlers from Europe, who became engaged in the production and shipping of citrus fruit. (Note: Mr. Luebben obtained the above and following data from interviews with European citrus importers, trade papers, and other sources.)

## Citrus Fruit Organizations

The "Pardess" Cooperative Society of Jewish Orange Growers was organized, in Palestine, in 1900, by the Jewish Colonization Association. The object of this organization was the purchase of fertilizer and packing material as well as supervision of the sale of the Palestine citrus crop. The membership has grown from 10 to around 250, controlling 4,450 acres of citrus groves. During the last shipping season (1931-32), the "Pardess" Society handled around 740,000 boxes of Palestine citrus fruit.

In 1913, some Jewish citrus growers, not members of the "Pardess" Society, formed an organization called "Merkaz", intended as a central organization for handling Palestine citrus fruit going into export. This organization terminated with the World War.

In 1924, a number of Palestine citrus growers who had been members of "Merkaz", organized another cooperative association known as "Hachaklai". It is estimated that this organization and the "Pardess" Society, together, control 20 to 25 per cent of the Palestine citrus crop, with the remainder in the hands of large and small independent operators, the largest of whom is reported to have shipped around 200,000 boxes of citrus fruit during 1931-32.

In 1929, Jewish citrus shippers organized the Jewish Citrus Exchange, for the purpose of negotiating shipping contracts, conducting marketing propaganda, improving citrus export practices, and encouraging a citrus by-product industry. Another organization, formed in 1930, was the Citrus Growers Section of the Jew-

ish Farmers Federation, representing a set-up for the scientific study of citrus production problems. It has also established a course of training in the grading and packing of citrus fruit.

## Government Assistance

The government of Palestine is very much interested in the citrus industry. In 1928, there was passed an ordinance establishing a Fruit Inspection Service, for supervising the quality and packing of fruit intended for export.

The government of Palestine recognizes the Citrus Fruit Committee, composed of leading Palestine citrus shippers, nominated by the Chamber of Commerce, as the authorized representatives of the Palestine citrus fruit industry.

## Exports of Citrus Fruits

Oranges are the principal citrus export from Palestine, exports averaging around 2,000,000 boxes a year during the period 1927-28 to 1930-31. The United Kingdom is the principal foreign market, taking around 75 per cent, while Germany takes around 12 per cent and Egypt 9 per cent.

The following table shows export of oranges from Palestine:

## Exports of Oranges (in 1,000 boxes)

	United			
Year	Total	Kingd'm	G'r'm'y	Egy't
30-31	2,470	1,725	510	26
29-30	2,696	1,997	421	123
28-29	2,232	1,728	143	222
27-28	2,678	1,943	112	521

Source: Unofficial trade statistics.

Mr. Luebben also calls attention to preliminary trade statistics, indicating exports from Palestine during the past season (1931-32), of around 3,555,000 boxes of citrus fruit (oranges and grapefruit, mostly oranges). The United Kingdom took 2,500,000 boxes and Germany 650,000. Other markets included Rumania, Denmark, Netherlands, Sweden, Norway, and France.

While small as yet, exports of grapefruit from Palestine have risen from 2,000 boxes in 1927-28 to 57,000 boxes in 1920-31.

## 5-Year Marketing Plan

In view of increasing citrus production, and the necessity of expanding present foreign markets and the securing of other outlets, Palestine citrus growers and exporters have in mind a 5-year marketing plan. Features of such plan include:

1. Improvement in the packing of Palestine citrus fruit.

2. Lowering of overhead costs.

3. Improvement of transportation situation, including direct steamer service to new foreign markets, also reduction of from 3 to 5 days in length of voyage to foreign outlets.

4. Widespread foreign advertising of Palestine citrus fruits.

5. Calling attention of Palestine government to necessity for commercial treaties with countries offering outlets for Palestine citrus fruit.

6. Development of Palestine citrus by-product industry.

In connection with the Palestine 5-year marketing plan, it is intended to increase citrus exports to 7,000,000 boxes (6,350,000 boxes of oranges and 750,000 boxes of grapefruit) by 1936-37. Yearly exports are anticipated, as follows:

1931-32	3,550,000 boxes
1932-33	3,750,000 boxes
1933-34	4,500,000 boxes
1934-35	5,250,000 boxes
1935-36	6,000,000 boxes
1936-37	7,000,000 boxes

Europe is to be divided into five sections, for the purpose of the Palestine 5-year marketing plan:

1. United Kingdom.

2. Northern Europe (Germany, Netherlands, Belgium, Denmark, Norway, and Sweden).

3. Baltic countries (Lithuania, Latvia, and Estonia), and Central Europe (Poland, Bulgaria, Czechoslovakia, Hungary, and Turkey in Europe).

4. Countries near orange regions (France, Yugoslavia, Austria, Switzerland, and Albania.)

On the basis of 5 Palestine oranges per capita, it is anticipated that the northern European countries may be able to absorb around 2,800,000 boxes of Palestine oranges in 1936-37. The Baltic and central European countries are expected to take around 1,250,000 boxes on the basis of 3 1/2 Palestine oranges per capita. Countries near orange regions are listed for around 500,000 boxes, on the basis of 1 1/4 Palestine orange per capita.

Careful grove work and judicious advertising will do more for the citrus industry than all the tariffs in the world.

The chief ambition of some men is finding fault with their present condition.

# The Citrus Industry

with which is merged The Citrus Leaf  
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## TEXAS AND FLORIDA TO CO-OPERATE

Announcement by Texas Citriculture, printed elsewhere in this issue, that Texas grapefruit growers have decided to co-operate with Florida grapefruit growers to control orderly distribution of grapefruit produced in the two states, is good news to the grapefruit growers of Florida. It is particularly gratifying to The Citrus Industry, since this publication has advocated such a system of co-operation ever since Texas entered the citrus field on a commercial scale.

The plan as outlined by Texas Citriculture calls for a Texas organization similar to the Florida Citrus Growers' Clearing House Association, to function in connection with the Florida Association in controlling distribution to the end that glutting of markets may be curtailed or eliminated.

Texas grapefruit growers, it is said, are almost unanimously behind the movement, as they realize that it is much better that Florida and Texas should co-operate rather than compete in the grapefruit market. In Florida, the Florida Citrus Growers' Clearing House Association is expected to take the lead in bringing about 100 per cent co-operation on the part of the Florida growers.

Such an organization is badly needed, as The Citrus Industry has frequently pointed out, and should lead eventually to a still larger and more comprehensive organization which will take in not only the grapefruit growers of Florida and Texas but those of Arizona and California as well. A similar organization for the control of distribution of oranges in all of the orange producing states should be the next step in this movement for progressive co-operation.

## HOLD YOUR GREEN FRUIT

With the opening of the citrus shipping season, it is apropos that the usual timely warning should be issued against the shipment of green or unfit fruit to the Northern markets. In view of past experiences, it would seem that

such a warning should be unnecessary, but history seems to prove otherwise. There always have been and probably always will be growers and shippers who hope to profit by taking advantage of every opportunity to secure the "high dollar" for early shipped fruit, regardless of how much such a practice may operate against all shippers, including the shipper of unripe fruit, later on in the season.

One car of green fruit distributed in each of a dozen Northern distributing centers will do more to disrupt the market and lessen the demand than the shipment of a hundred cars of ripe fruit to each of those markets later on can do to counteract the folly.

Commissioner Mayo and his corps of inspectors doubtless are doing and will continue to do everything in their power to prevent the shipment of unripe fruit, but they should have the united support and backing of every grower and shipper who has the welfare of the industry at heart.

There is but one safe rule for the shipment of citrus fruit, and that is this: "Ship no fruit that you would not be willing to put on your own table for yourself and your family to eat." If this rule is followed, Florida citrus growers may safely count upon a profitable market for their fruit.

## FERTILIZER MEN ORGANIZE

An organization which should mean much to the citrus growers of Florida is the Florida Agricultural Research Institute, recently organized by a group of prominent Florida fertilizer manufacturers for the purpose of gathering and compiling scientific data to be placed before Florida growers with a view to the production of more bountiful and better crops.

Much has already been done by state and federal scientists in the way of research into the methods of producing maximum yields of superior quality at the minimum cost. The work of the Florida Agricultural Research Institute will be of the same general character and the results of the research will be passed on to the grower through the medium of Florida publications.

The personnel of the officers and directors is a guarantee that the work carried on will be thorough and painstaking and that the findings will be impartially passed on to the growers. The Institute is headed by C. T. Melvin, president; Bayless W. Haynes, vice-president; W. C. Johnson, secretary; and Fred Coffee, treasurer. The directors include the above officers and also W. L. Waring, John Burke and Ray Trueman. Robert P. Thornton is director of research.

The Citrus Industry believes that the work of the Institute will result in much benefit to the growers of the state by providing a vehicle for the carrying out of scientific investigations on an elaborate and systematic scale.

If some enemy "planted" that arsenic spray in Barney Kilgore's groves he should be punished. The same thing was said to have been done in Governor Carlton's grove last season.



# CITRUS COMMENTS

—BY—

Charles D. Kime, Orlando, Florida

This department is devoted to furthering horticultural interests of Florida. Letters of inquiry, discussion or criticism will be welcomed.

## Present Opinion On Soil pH. Acid Or Alkaline

It is easy to over emphasize important points in Citrus Fruit Production and for a time to lose sight of the relationship such a point must bear to all of the other necessary steps. In the case of the soil pH or hydrogen ion concentration a number of factors have been instrumental in causing a wave of popularity which is just now at its height.

The grower has long recognized that he needed all of the soil information he could get. He is continually wanting to know more about what is going on in his grove. If he were a farmer he would avoid the use of acid soils for clover, etc. He would know that limestone is decidedly beneficial for many other crops besides clover. Green manuring and its results would be an open book. When he became a citrus grower he found that such questions were just as vital, but that information was lacking. Then quite suddenly he was handed an easy test for soil acidity. One he could make himself or get others to make for him.

Up to this time litmus tests were known and used but they were unreliable. Other tests could be used but they were very troublesome and expensive. The colorimetric method of soil testing proved easy and gave a definite answer to one very definite question: Is the soil acid or is it alkaline, and if so to what extent? A careful worker could make field tests with a fair degree of accuracy. Psychologically the effect was to seemingly clear up a rather mysterious "chemical" problem. Here was something visually illustrated to whoever cared to look. I am of the opinion also that with some at least the highly colored reactions secured had something to do with its popularity.

There is a place and an important one for pH work.

Now after several years of soil testing it is pertinent to inquire "where we are at?" There is now a large amount of data on the use of field outfits. Much of this comes from pri-

vate sources, and represents work done by grove owners themselves. A much larger amount has been done by men in grove caretaking work and by fertilizer salesmen. A more important amount of such work, however, is accumulating from the investigations being carried on by State and Government workers. From the first two groups we get impressions as to what is thought about the importance of pH tests. From the last group we get definite facts on which we may later base some very important trends in grove fertilizing.

If from the first group (the grove owner) we inquire regarding the importance of pH tests we get a confused impression of views. By far the larger percentage of growers do not know how to interpret the conditions they find after making soil tests. Others are working out a definite fertilizer set-up from the results of their tests and putting it into practice. Grove caretakers appear to be in about the same condition. Some plan their work very definitely with reference to soil tests, others do not. Fertilizer salesmen are still open minded on the whole as to its value and are quick to adopt any definite information secured. However, the present conclusion among the groups would be to largely disregard pH readings in making out a grove set-up. This view would be modified by many to except groves in bad condition. Here the pH reading is considered significant if the soil lies out of the optimum range. The decision as to whether a soil is too alkaline or too acid is largely based on the type and location of the soil in question. It is not difficult to get some reliable information provided care is taken in lining up the actual conditions.

There are in the state some outstanding results of work directed toward the correction of soils apparently out of the optimum range. Such growers are enthusiastic in their praise of such work. Others however have not been able to get any tangi-

ble result to date and so far have been unable to see any specific connection between soil pH in their groves and grove condition.

It is especially interesting to note that the grove location and the root-stock on which it is set as well as the variety, all have some bearing on these conclusions.

The citrus root-stock is extremely adaptable to the conditions under which it is usually planted. As a result we find absolutely satisfactory groves within quite a wide range of acidity and alkalinity. This is especially noticeable in contrasting heavy hammock and sour-stock conditions with ridge-land and lemon-stock. Groves that under one set of conditions would be considered out of the optimum range, under the other set of conditions would be considered too alkaline or too acid in reaction. For example in heavy hammock land and marl subsoil, groves in good condition may run as alkaline as pH 8.00 or possibly even higher. On the other extreme satisfactory commercial properties are found where the pH reading is extremely acid often as strong as pH 4.00 or stronger, depending on when and how the readings were made.

Many grove owners know these facts so it is not surprising that they have not been able to work out a satisfactory understanding of this complicated problem.

The assumption of an optimum point at which citrus will grow best and bear maximum crops is in open dispute at this time. There are advocates for each extreme on all sides. Still the greater proportion of growers are open minded and still looking for evidence on which to base a conclusion.

Outside of the state we note that California and Texas soils are definitely alkaline. They are rich in salts often to a harmful extent. They are heavy clay type soils. Contrast these with the sandy types found in Florida and here again it is easy to see that we must work out our own re-

(Continued on page 13)

# IMPRESSIONS

By the Impressionist

Estimates that the apple crop will be the shortest since 1927 to us is a bit of cheer. Just that much less competition this winter for citrus fruits.

Then the action of Northwestern apple interests in voluntarily barring "C" grade applies from shipment should further aid average apple prices materially. Northwestern growers are showing a willingness to sacrifice several thousand carloads of low grade apples to the end that their better fruit may profit through the absence of competition from their own low grade fruit. Wonder when, if ever, we shall see Florida citrus growers willing to keep their third grade fruit off the markets?

Truly it is a case of Sour Grapes in California. The Federal Farm Board, the Intermediate Credit Banks, the Grape Control Board, the Raisin Pool, and even the Federal-aid wine brick undertaking, seem to have failed wholly in the project of making the waters of finance flow uphill. Not to mention the California banking interests which, according to a California publication, "now have on their hands a heavy percentage of the San Joaquin vineyards with more than fair prospects for getting a larger percentage by the time 1932 taxes must be paid."

The California grape deal, with its big sign-up campaigns, furnishes outstanding proof that control of volume does not bring control of price, especially where a perishable product is concerned. Perhaps when all possible sources for funds have been exhausted the banking interests, legislators and congressmen of these United States will be forced to admit that Archimedes was right.

One perishable deal which had a black-eye from the start, and continued with a black-eye throughout to end in a substantial success was the recent black-eye pea deal in West Florida, when for the first time this product went forward from the State in solid carloads.

The new Hurry-Up grapefruit is certainly speedy. Three months from

planting seed to a small plant in blossom. That's what they did recently at the General Electric laboratories in Schenectady in connection with a series of experiments in treating seeds with x-rays. But only two of the treated seeds reacted thusly. The others did all sorts of queer things, mostly producing "twists" and freaks. Still we are encouraged to continue our own rather extended effort to bring out our Non-squirt grapefruit.

Speaking of scientific experimentation, we believe that ultimately the experiments of Dr. Miller and Mrs. Bassett, conducted under the general direction of W. W. Yothers of the Federal Experiment Station at Orlando, are due to revise wholly our Florida ideas concerning arsenical sprays when used on citrus fruit trees. To date we have had generally speaking two schools of thought among the growers and shippers concerning the use of such, the "fors" and the "againsts." These careful and conclusive experiments rather put both schools in a bad light.

Few horticultural experiments in recent years have brought to light so much certain knowledge out of the darkness of guesswork and conjecture. For one thing they found out that the precise action of such sprays is simply to speed up the function of the trees. Sap flows faster and every function is speeded up. The effect of such sprays, in proper dosages, is perhaps to be likened to the effect of proper medicinal dosages of strychnine upon humans. Given in proper quantities and properly the result is to "push 'em up Joe" all around, with no bad effects upon trees nor fruit. The action of such sprays further was ascertained to be wholly through the leaves, the tree roots do not make use of these materials. Used properly there is no possible chance of any hurtful residues upon the ripened fruit. We, having observed the process carefully since it was first introduced into Florida on Terra Ceia Island some dozen years ago, have long been enrolled among the "againsts." We confess to seeing the error of our earlier thinking.

But the results of these experiments give small comfort to the old "Fors." Particularly should this be true of those who literally ruined good groves by improper dosages. For it seems that, as with strychnine when used upon humans, there is now determined what constitutes a "medicinal dose" and what constitutes a "toxic dose" of this material. Stimulated by misinformation and guesswork many growers have been administering "toxic doses" to their trees, in which cases theirs is the loss. Now, thanks to the Yothers-Miller-Bassett findings, they and others can eliminate the guesswork; and we in the industry generally may revise our opinions concerning the whole operation.

And thinking about that USDA Experiment Station at Orlando, we are reminded of some of the very interesting work in Soil Fertility experiments going on there now under George M. Bahrt of the Bureau of Chemistry and Soils. If you harbor any notion that Florida soil is simply Florida sand, and uniformly to be treated as such, drop in there and take a look at that rack of large glass tubes upon one wall. In each tube is reconstructed a particular type of Florida soil from the top downward to a depth of perhaps thirty-six inches. Looking 'em over one is inclined to reflect that to prescribe the same diet for all trees growing in these differing soils will be about like prescribing the same diet for Jim Morton and Collins Gillett.

The recent passing of L. R. (Russell) Warner, more familiarly known to a large part of the Florida citizenship as Bugs Warner, has deprived Florida horticulture of an untiring guardian, and has robbed us of a friend. For something like a dozen years Bugs Warner guarded the Key West entrance to Florida against the introduction of West Indian and other insect pests. It was an important job; and well done. And through it all, daily confiscating gentlemen's nosegays and ladies' bouquets, and rifling their luggage of cherished fruits picked up in the islands, Bugs

Warner with his cheerful diplomacy and underlying sincerity managed to accumulate thousands of friends from among those he so cheerfully stripped of their pretty, but dangerous, souvenirs. A lesser personality would have aroused resentment and created an equal number of enemies.

The State Plant Board by formal resolution has expressed its regret over the loss of Bugs Warner, and very fittingly. And a whole host of friends have been writing to his widow in an effort to express their condolence at her loss, for to know Bugs Warner was to love him. Here was a Pennsylvania Dutchman who, coming to Florida fresh out of college, made one of the best Florida crackers of this generation.

One of the benefits (?) of extending the scope of the Stars and Stripes is to be seen in the recent announcement that the Virgin Islands are preparing to go into winter tomato growing.

Congress talks long and loudly of farm relief, then turns around and socks the farmers. The new tax on telegrams and long distance telephone calls hits growers of perishables hard, they being the largest users of these services. One citrus shipping organization, for instance, is a much larger user of the telegraph and telephone than is the U. S. Steel Company. Then the tax of two cents each upon bank checks will hit the milk producers for just about two per cent of their creamery incomes, unless the methods under which they have operated for years are changed radically. It has been the custom of the creameries in the big milk sections to mail daily to each farmer a check for his day's butter-fat; and the average amount of such checks is placed at one dollar each. It's our impression that few members of the Congress have any real knowledge of how farmers transact their business, and that governmental executives have none at all.

Our citrus folks who went to New York for the Apple Convention on returning seemed unanimous on one point, that the "pre-cooled" hotel in which it was held was a boon to sweltering humanity.

Conventionites are reported to have howled at J. S. Crutchfield's story of the widow with eight children who married a widower with nine children. Their invitations carried the line: "No flowers, this is not an amateur affair."

## CITRUS COMMENTS

(Continued from page 11)

actions and soil deficiencies. Our soils are definitely acid excepting in a few special locations.

On looking back we get the distinct impression that the development of the colorimetric method of pH determination provided a simple diagnosis for an ill we had been led to believe was all important. The soil pH is important and in some cases is a necessary bit of information but it is only one of a large number of related factors that must be taken into account. A fair consideration of all of the factors involved will quickly disabuse one's mind of so simple a process being the answer. It would be too good to be true. If we speak of growing fruit as a science then every grower is a PLANT PHYSIOLOGIST. His success as a grower depends on how good a Plant Physiologist he is or else how successful he is in taking advantage of the knowledge of men who are good Plant Physiologists.

A further substantiation of the above view is found at present in the work done by government and state investigators. From literally

hundreds of tests there has not been any outstanding results justifying a general recommendation. Even the optimum range for citrus is still in dispute. There is developing, however, some very important work on fertilizing in which pH readings play a prominent part. Current literature on the subject also indicates that while the acidity or degree of alkalinity of the soil is important it is only a means of clarifying other problems. Thatcher, on "The Chemistry of Plant Life", a study of colloidal chemistry, soil bacteriology and soil chemistry opens up so many varying factors that we are confronted with more moves than a chess game.

A study of hydrogen ion concentration quickly shows us that we are dealing with a soil balance proposition. Greatly disturbing such a balance is often serious unless carefully handled.

All of this gives some idea of why we have made so little headway in handling soil tests for either the degree of acidity or alkalinity. In any event the problems in which it is important are much more interesting and valuable.

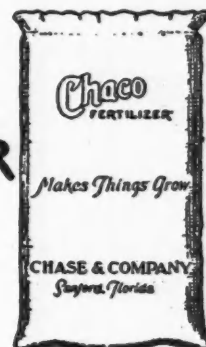
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# Chaco

## FERTILIZER

*Time MUST Tell*

Chaco builds  
soil fertility  
and makes  
better fruit.





# THE GROWERS' OWN PAGE

## CALIFORNIA FRUIT IN FLORIDA

Sorrento, Florida.  
August 11, 1932

The Citrus Industry  
Tampa, Florida.

Dear Sirs:—

It would be greatly appreciated by myself and other citrus growers if you would kindly publish the following letter in your paper.

There has been much discussion about the lifting of the quarantine on California oranges and lemons.

It seems, by what Dr. Newell says in various Citrus Papers of the state, that the Plant Board went to a deal of trouble and expense to find out there was little danger of bringing brown rot into the state on California fruit.

I, for one, think that it would be well for the State Plant Board to spend a little more time investigating our quarantines. There is a ruling that all citrus nursery stock must be defoliated before it can be moved, which destroys all your friendly fungus and puts you to no end of trouble to start it again.

There is a possibility of Florida doing a good business, raising Kumquat and Calamondin trees for the northern florist. A friend of mine (Florist) was here last winter and was much taken with the Calamondin. Said he could get me a good price for them in 12 in. pots, but the Plant Board says that they can not be

### CITRUS COMMENTS

(Concluded from preceding page)

Methods used in making pH determinations are interesting. I submit a sheet showing the work done five different times on four samples. The agencies involved were two large grove operators, one fertilizer company and one of the best State Laboratories. It involved the use of colorimetric outfits from two different sources and the quinhydrone electrode. The variation at best would be considered very large indeed and unreliable.

Sample	Test 1	Test 2	Test 3	Test 4	Test 5
1.	6.4	5.8	6.0	6.2	6.6
2.	6.2	6.8	5.6	6.2	6.4
3.	6.2	5.8	5.4	6.2	6.0
4.	5.8	6.17	6.2	6.2	6.4

We are fortunate that the main investigational work being carried on

This department is devoted to the growers, for their use in giving expression to their views and a discussion of growers' problems. Any grower is welcome to make use of this department for the discussion of topics of interest. The only requirements are that the articles must be on some subject of general interest, must be reasonably short and must be free from personalities. The editor assumes no responsibility for views expressed, nor does publication imply endorsement of the conclusions presented.

shipped without removing all leaves and fruit.

This ruling went into affect in 1916-17 when we had Citrus Canker. We have had no Canker in over five years, still the quarantine has not been removed. We know Canker attacked the fruit as well as the leaves, but we have been shipping oranges right on. The Canker is not dangerous to states that raise no Citrus. Still we are not allowed to ship, even to the extreme north, without defoliation.

It seems that there is a good chance for investigation at home to help the home industry instead of spending time and money to help California.

Sincerely,

A. V. Lent.

in the state is done on outfits that are accurate to a greater degree by far than the above.

The conclusions we reach at present are about as follows.

1st. If you want to change the soil pH reading to either more alkaline or more acid, go about it slowly.

2nd. Take pH readings several times yearly to overcome the seasonal variation.

3rd. Take readings through the whole depth of the root-feeding area.

4th. If the grove is out of condition, not bearing, etc., pH readings may have a very valuable bearing on

how to remedy the situation but it is rarely the only thing at fault when it is off.

5th. Used as a guide to check which way the grove may be going, more acid or more alkaline, it does offer a valuable check on grove fertilizing and is therefore a valuable part of the grove record.

## CITRUS WHITEFLY FUNGUS SHOULD BE APPLIED NOW

Citrus growers are cautioned that the rainy season may end abruptly about the middle of September and that facilitating the spread of the red whitefly fungus now may lessen if not eliminate the need for spraying with oil emulsion. This advice comes from Dr. E. W. Berger, entomologist with the State Plant Board, Gainesville.

He says that the Plant Board still has several hundred cultures of this fungus available for distribution at cost, or \$1 per culture. A culture is sufficient for treating an acre of trees. Growers who do not have a good stand of whitefly fungus on their trees are urged to apply some now before it is too late.

The seventh Florida National Egg-Laying Contest will begin October 1. There is still room for entries, and applications should be made to E. F. Stanton, supervisor, Chipley, Fla.

Hogs marketed in September and early October usually bring from two to three cents a pound more than those sold later during the winter.

Sweet peas planted in September will make flowers by Christmas, and those planted a month later should bloom in January.

## "IRRIGATION"

Advices of our Engineering Department offered without charge. Let us show you some of our installations.

67 Years of Service

**THE CAMERON & BARKLEY CO.**

Tampa, Fla.

# BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc.



Edited by The Growers Service Department

## BLUE GOOSE FLORIDA MEN MEET IN ORLANDO

On September 20 a meeting of all Florida packing house managers and executives of the Florida Division of the American Fruit Growers Inc. is scheduled to be held in Orlando.

The meeting is scheduled as an all day affair with both morning and afternoon sessions, a luncheon being served at a local hotel during the intermission.

In addition to interesting technical discussions affecting the operation of citrus packing houses, and plans for the most effective packing of next season's citrus handlings designed to obtain greatest net returns to the growers, the gathering will hear from Messrs. R. B. Woolfolk, C. N. Williams, C. R. Pilkington, W. M. Scott and Allan Wilson the very latest market information.

Beside giving those present the benefit of news of recent market reactions upon deciduous and other fruits and vegetables, these gentlemen will discuss the outlook for citrus fruits during the coming season, and the attitude of the trade in various centers as exhibited to them during recent contacts.

Plans for revising the methods heretofore employed in merchandising second grade Florida citrus fruits, and a program for intensive effort to obtain the fullest value of such fruit in the markets by this organization also will be one item of interest for the meeting.

## APPLE CONVENTION IS BASIS CITRUS OPTIMISM

Returned to Florida from their recent Northern trips, which included participation in that great mid-summer gathering of the produce trade of the country, the Apple Convention, Messrs. R. B. Woolfolk and C. N. Williams of the Florida Division of the American Fruit Growers Inc. brought with them a note of optimism concerning the outlook for Florida citrus fruits after the opening of this coming shipping season.

(Continued on page 2)

## PROSPERITY'S RETURN HINGES ON RAIL RATES

An important item of the program of the recent annual convention in New York of the International Apple Association was a full discussion of transportation and freight rate problems as related to the perishable industries of this country. This general



J. S. Crutchfield

An impression of the president of the American Fruit Growers Inc. by cartoonist of the New York Produce News, as the former appeared at the recent national Apple Convention in New York, where he led the discussion of transportation and railroad rate problems.

discussion, which followed important speeches upon the subjects, was presided over by J. S. Crutchfield, president of the American Fruit Growers Inc.

In connection with his own remarks during progress of this discussion, Mr. Crutchfield, among other things, said:

That in his opinion there is too much disposition to recognize agricultural and railroad problems as separate and distinct from each other instead of as joint difficulties. It is time to get down to brass tacks, he said. He agreed that the present method of regulation is unfair to

(Continued on page 2)

## OUTLOOK BRIGHTENS AS SEASON NEARS OPENING

The Florida citrus horizon grows brighter as Florida citrus shipping nears its opening, according to C. N. Williams, Orlando, citrus salesman of the Florida Division of the American Fruit Growers Inc. Mr. Williams is back in Florida following a northern trip which in addition to attendance upon the Apple Convention in New York included visits to some of the principal markets and contact with leading members of the fruit trade in many places.

Early Florida shipments are due to be very light in both oranges and grapefruit, he believes, which fact will probably enable demand to build well ahead of the available supply.

Notwithstanding the very low average prices which the markets have paid through the summer for all deciduous fruits, he sees considerable encouragement in the reception which the more desirable of California's summer Valencia oranges have met. These have been running heavily to very small sizes and poor quality for which reason the average prices obtained have not been exceptional. However, in many markets whenever California Valencias in desirable sizes and quality were offered the prices brought were very satisfactory indeed conditions considered. This in the face of actual over-supplies of lowest priced deciduous fruits is taken to show the strong position of citrus fruits.

The same price contrasts with those on deciduous fruits also have been evident of early shipments of Porto Rican grapefruit reaching the markets recently. Prices paid for fancy lines of such grapefruit were very high.

Further encouragement for Florida grapefruit growers, he sees, in reports that scab has been unusually prevalent in the Porto Rican producing districts, with the result that the crop there, it is said, will run heavily to lower grade fruit with only a small percentage of Number One fruit available for shipment.

(Continued on page 2)

## BLUE GOOSE NEWS

OF INTEREST to the citrus growers of Florida, each month, contained in four pages of paid advertising from the

**AMERICAN FRUIT GROWERS INC.**

Florida Division

Sixth Floor, State Bank Bldg.  
ORLANDO, FLORIDA



### PROSPERITY'S RETURN HINGES ON RAIL RATES

(Continued from page 1)

the railroads and he pledged support in doing away with this regulation.

However, there must be a fundamental change in the railroads' attitudes and policies, he declared. In the past their policies have been shortsighted. In 1918 the railroads received a 25 per cent increase in rates. In 1920 they obtained a 25 to 40 per cent increase, and the produce trade supported this move. In this instance the provision was made that the railroads should promptly and reasonably make any readjustments necessary. They accepted all the benefits of the 1920 Transportation Act, but ignored the things with which they did not agree.

He next quoted from a statement made in 1922 by General W. W. Atterbury, president of the Pennsylvania Railroad. This statement was to the effect that there can be no return to prosperity until there is a proper readjustment of transportation charges in relation to commodity prices. Petitions to the railroads for relief have brought none, he said.

As badly off as they claim to be the railroads are not nearly as badly off as is agriculture, he declared. If agriculture and the railroads both can be restored to a profitable basis, prosperity will result, but such restoration cannot be effected until the equality of agriculture and the railroads is recognized.

Mr. Crutchfield also said that during the presidential election of 1928

Adv.

agriculture was referred to as not being a business but rather a "mode of living". Unless the railroads in the near future adopt different policies they also may come to be classified in the same way.

### OUTLOOK BRIGHTENS AS SEASON NEARS OPENING

(Continued from page 1)

Isle of Pines grapefruit growers are reported as bending every effort to get their crop off and away in advance of any heavy shipments from Florida. This together with the tariff now in effect in the United States which applies against grapefruit from the Isle of Pines is expected to divert much of the island's fruit to other markets, and to reduce to a minimum the competition of that fruit with Florida-grown grapefruit.

All in all, Mr. Williams is considerably encouraged as to the outlook in general, and Florida's citrus marketing prospects.

### APPLE CONVENTION IS BASIS CITRUS OPTIMISM

(Continued from page 1)

During the progress of the convention they were in contact with brokers and representatives of the American Fruit Growers Inc. from many sections of the United States and Canada and some from abroad. In addition there were many opportunities for discussions with the principal wholesale dealers in Blue Goose fruits from over a large part of the country.

Authentic news of the short crop of late apples to be marketed after January first which is generally in competition with Florida citrus, was in itself encouraging in its relation to the citrus marketing outlook. News from the producing centers for other fruit crops also was reported as giving encouragement to the citrus outlook; and, coupled with the continuing reports of the trend toward national economic recovery, is calculated to furnish a sound basis for conservative optimism as to Florida's citrus marketing possibilities.

### STRENGTHENING EXPORT TRADE CONNECTIONS

J. G. Welch, New York, manager of the export department of the national organization of the American Fruit Growers Inc. has returned to his post following a four months trip through the British Isles and Continental European countries.

On his tour Mr. Welch contacted the selling connections of the Ameri-

can Fruit Growers Inc. at points visited, and worked with them to plan enlarged activities on behalf of Blue Goose fruits, which already hold first place among fruits imported into these countries from the United States.

In addition he was able to arrange for an enlarged representation to cover even more markets in response to signs of bettering European business conditions and prospects for increased buying power on the part of a greater number of potential consumers, thus adding to what already ranked as the leading export representation affiliating with any concern in the U. S. A. exporting Florida citrus fruits.

### W. H. BAGGS REELECTED BY APPLE ASSOCIATION

William H. Baggs, Pittsburgh, vice-president and general manager of the national organization of the American Fruit Growers Inc. was reelected vice-president of the International Apple Association at its recent annual convention in New York.

This is one of the several important fruit trade organizations in which Mr. Baggs serves either in an executive capacity or as an active member of the directorate. Long known for his untiring efforts to promote better ethics and practices in the trade, his aid and counsel is sought wherever cool judgment and most complete market information is of value in the various trade bodies.

### BRITISHERS ANTICIPATE GRAPEFRUIT DEMAND

Returning from their recent trip to New York Messrs. R. B. Woolfolk, vice-president and C. N. Williams, salesmanager of the Florida Division of the American Fruit Growers Inc., stated that while there they had obtained considerable encouragement concerning the consumer demand for grapefruit to the British Isles next season.

In New York for a period of several days they were in daily and close contact with Messrs. Pask, of London, Webb of Glasgow, and Collier, of Southampton, which gentlemen through their affiliated organizations are the dominant factors in grapefruit imports into the British Isles, and furnish the principal wholesale outlets for Blue Goose grapefruit in Great Britain.

They report that after giving full consideration to tariff duties, the



## Four Points--For A Quick Recovery

- "1. Get the Government out of Business.
- "2. Stop useless regulation; don't try to mix economics and politics.
- "3. Keep the channels of trade open by means of reasonable transportation charges.
- "4. Avoid artificial restrictions of every kind."

R. G. Phillips.

Note: Mr. Phillips has given a lifetime to the perishable industry. For many years secretary and active manager of the International Apple Assn. he has built it into the one biggest and most effective organization in the produce trade, and is known as one of its best posted and most far-thinking members.

economic situation, and the visible supply of grapefruit from the various producing districts, Messrs. Collier, Pask and Webb were quite optimistic concerning the demand for Blue Goose Florida grapefruit in that country during this next shipping season.

All fruits under the Blue Goose trademark are reported as steadily and continuously gaining in popularity with the British people; and Florida Blue Goose grapefruit in particular is said to have established itself in a high place in the favor of the consuming public.

### ORIGINAL BLUE GOOSE GETS INTO PRINT AGAIN

The famous wild Blue Goose, the Luck Bird of Northern Indians and Eskimos, from which the trademark of the American Fruit Growers Inc. derives, has broken into print again. This time in the National Geographic Magazine of the National Geographic Society in connection with an article on wild life by George Shiras 3d of Ormond Beach, the well known field naturalist.

On page 304 of the current, Sep-

tember issue, Mr. Shiras presents a full page photograph of literally hundreds of Blue Geese in flight over the Rainey game refuge in Louisiana in Winter. On page 305 the author presents the portrait of a Blue Goose, posed by a Blue Goose on the Louisiana marshes, whither it had been attracted before the camera by skillfully placed corn bait.

### ALL BACK AND READY FOR CITRUS ACTIVITY

Allan W. Wilson assistant citrus sales manager and Stacey Z. White have returned to their duties in the sales department at Orlando after a period spent with W. M. Scott in handling the peach sales of the American Fruit Growers Inc. in the Georgia and North Carolina peach producing districts.

The Georgia peach crop was very short in yield. Due to the generally low prices obtaining in the markets of the country for all berries and deciduous fruits throughout the entire summer, there were no records broken, but Blue Goose peaches are said to have more than held their own in market competition, and to have well

demonstrated the high place which the Blue Goose trademark has come to occupy with the consuming public of the country.

Following the close of peach shipping Mr. Wilson made a tour of Southern Markets in preparation for citrus operations when shipping opens.

### FRANK P. BEATY SLOW IN MAKING IMPROVEMENT

In the month which has elapsed since his injury in an automobile accident was recorded in these columns, Frank P. Beaty, Cocoa, manager of the packing house of the American Fruit Growers Inc. at that point and likewise manager of the Brevard Packing Co. at Mims, has been making slow improvement.

Still confined in a Daytona Beach hospital at the time this is written, Mr. Beaty is reported as having made progress toward recovery from his skull injury, but had not yet improved to a point where it was thought advisable to question him upon the manner in which the accident, to which there were no known witnesses, had occurred.

Adv.

## Powerful Sales Support For Your Production



From growing centers to the consumer's table AFG Service performs an important, and constantly increasing, part in the successful distribution of Florida's citrus crop . . . maintaining a reputation for high quality, and constantly devising more effective marketing programs.

Today AFG Service is selling regularly in more than 3,000 markets here and abroad. It always is in possession of complete market information and in position to select the markets most suitable.

By experience and facilities AFG Service is completely equipped to render superior sales aid; and growers further obtain the unusual advantage of employing the widely known Blue Goose mark of quality for the identification of their products.

### American Fruit Growers, Inc.

Florida Division

Orlando, Florida

## Plant Research Yacht Lands Large Caribbean Collection

Returning from his sixth voyage for the Department of Agriculture, Allison V. Armour and his research the S. S. "Utowana," tied up at the Washington Navy Yard and unloaded a comprehensive collection of plants, seeds and cuttings. These were gathered together during the three months' trip through the Caribbean from the Bahamas down through the Leeward, Windward and Trinidad groups to Demerara and Surinam on the coast of South America. Dr. David Fairchild, organizer and formerly director of the activities of the Division of Foreign Plant Introduction, P. H. Dorsett, veteran explorer of the Division, H. F. Loomis of the Division of Cotton, Rubber and Other Tropical Plants, and Leonard R. Toy of the Homestead Substation of the Florida Experiment Station, together with Mr. Armour, formed the scientific staff of the expedition.

The objects of the expedition were to find, if possible, the original ancestor of the long-staple Sea Island cotton which is supposed to have come from the West Indies at an early date, and to collect and introduce fruits, vegetables, legumes and other forage plants, and ornamentals — trees, vines, and shrubs which would be of value to the Southeastern and Southern States.

The ship visited thirty-two islands and also made two stops on the mainland of South America. Through the cordial cooperation of the British, French and Dutch officials and the helpful suggestions they made, the plant explorers saved considerable time in carrying out the exploration program. Excellent botanical gardens exist in several of the islands and at the points touched on the South American mainland. Some others are longer established and more extensive and more beautiful than any existing in North America. Those of Antigua, Dominica, St. Vincent, Demerara and Surinam were planted more than one hundred years ago and contain splendid collections of palms, shade trees, and economic plants. Although valuable plant contributions were obtained from these gardens, the party gathered a large part of its collections in the jungles and on the mountain slopes of the various islands.

The collections include a total of 702 species representing 236 genera, roughly classified as follows:

Seventy-two were palms, 58 forage plants, 33 vegetables, 106 fruit and nut-bearing trees, vines and shrubs, and 333 ornamentals. No trace of the ancestor of the Sea Island cotton was discovered. If it formerly existed, it apparently has disappeared or has become so changed through natural hybridization as to be unrecognizable.

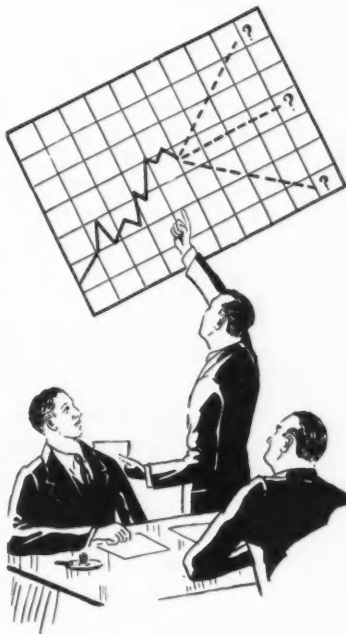
Sixteen Wardian cases of potted growing plants and cuttings were un-

loaded at Washington, in addition to several cases of seeds, some of which had been carried in cold storage. A Wardian case is a suitcase-size greenhouse or larger box similarly equipped for warmth, humidity, and watering for transfer of living plants from the tropics to distant greenhouses. A large number of cuttings and scions were also in the collection. To insure proper stocks for the budding of mango scions on arrival in Washington, fifty mango plants from the Coconut Grove, Fla., Garden, were taken aboard at Miami where the ship touched on the homeward trip. On arrival the whole collection was inspected carefully by

(Continued on page 23)

## GOOD-POOR OR MEDIOCRE

*Only Quality Fruit Will Take the Upward Trend*



The primary object of all citrus growers is to make money. But only those who take advantage of the important part that fertilizer plays in quality production can expect to fully realize the possibilities of citrus profits.

At this season the fall feeding of your trees is close at hand. What you give your trees now will supply the nourishment they need, add quality to the maturing crop and put your trees in shape for winter and a fresh spring awakening. Your profits this year and next depend upon this application.

The quality you get in Armour's BIG CROP Fertilizer makes for extra quality in fruit. And this year, when quality is so important, Armour's BIG CROP Fertilizer is the brand to use. It is your best assurance of taking fruit out of the poor and mediocre class. It offers you an opportunity to take advantage of the natural upward price trend that quality fruit will bring.



Our field representatives will gladly make recommendations based on the requirements of your crops.

**ARMOUR'S  
BIG CROP  
FERTILIZERS**  
ARMOUR FERTILIZER WORKS  
JACKSONVILLE, FLORIDA

# Distribution of Florida Citrus Fruits

By D. E. Timmons

It makes no difference to the Florida citrus producer where his product is consumed. He produces citrus for money and desires that those persons who are willing to pay a price which will yield him the greatest net return have his crop. It matters not to him whether the negro cotton farmer eats the oranges, the European tourist the grapefruit, and the New Yorker the tangerines or whether the entire crop goes to Washington, D. C.,—just so he gets the highest possible price.

We hear considerable about the desirability of having our citrus distributed over a larger territory. We also hear the theory propounded that if we hold citrus off the auctions it will cause auction prices to be higher, thereby setting a higher price for the country as a whole.

Under our present competitive arrangement, it does not seem logical to attempt the starving of the auctions. Buyers in these markets know the total potential supply and carlot shipments in transit. And, too, if one of our shippers practices a system of holding off one certain market, it affords better opportunity for his competitors to ship to that market. This would also apply if all Florida's production were handled by one distributing agency, since shipping agencies in California and other states could supply any markets Florida attempted to starve.

In so far as we can obtain higher net prices for our citrus to distant markets, all well and good; but if this broader distribution results in lower net prices and causes us to neglect our more favorable markets to the extent of allowing our competitors to supply these more favorable markets, the result will be a lower net return to our producers. Of course we would not say this would be desirable.

Carlot unload figures as reported by the Bureau of Agricultural Economics show that a much higher percentage of our grapefruit goes to the West and Central Western markets than of our oranges. This is due primarily to the fact that Florida produces a much larger percentage of the U. S. supply of grapefruit than of oranges.

Only about 20 percent of our carlot grapefruit are unloaded in New York while about 25 percent of our oranges are unloaded in New York. Chicago receives about one-half as much of our grapefruit as New York, or about 10 percent of our total carlot shipments. Approximately 10 percent of our oranges go to Philadelphia.

The four largest receivers of Florida citrus are New York, Philadelphia, Boston, and Chicago. Approximately 48 percent of our oranges go to these markets, while 42 percent of Florida grapefruit are unloaded in these markets.

Sixty-six cities from which we have carlot figures received about 90 percent of our grapefruit and 87 percent of our oranges. This does not mean that all this was consumed within the city in which the car was unloaded but gives us a relative idea as to the section of the country receiving the greater part of our crop.

The apparently large unloads on four or five of our markets might lead one to believe that our fruit is not being properly distributed, but when we consider the fact that we supply only a small percentage of the total citrus which is received on these markets, the picture changes. Even though New York receives 25 percent of our carlot oranges and 20 percent of our grapefruit, we supply only about 40 percent of the oranges and 66 percent of the grapefruit received by New York.

Philadelphia gets 55 percent of her oranges from Florida but of the 66 cities reported, we supply only 18 of them with more oranges than do our competitors. All of these 18 markets are east of the western boundary of Florida. Within this territory, there are 20 reporting cities which receive more than 50 percent of their oranges from our competitors.

There seems to be a reduction in carlot unloads of citrus fruits in southern cities. Motor truck transportation seems to be responsible for this decrease. During the past season up to January 1st almost a million boxes of citrus fruits were shipped by motor truck, most of which went to consumers east of the Mississippi River and south of the Mason and Dixon line.

The percentage of our carlot un-

loads of oranges which reach the markets in the territory around Wisconsin seems to be on the increase, while those cities around New York and Boston are practically stable, there being no definite trend in percentage receipts. This might indicate that a relative equilibrium has been reached in some of our eastern markets, and that the demand for the type of orange which California produces is greater by 20 percent in New York than the demand for Florida oranges. Seasonality of Florida's supply partly explains the difference. California supplies a larger percentage of summer oranges than does Florida. If Florida can economically produce more summer oranges, she may be able to compete more favorably in the eastern markets.

As competition for grapefruit markets becomes keener, due to increased production in other states, we may be forced off some of the markets on which we now enjoy a monopoly. Out of the 66 reporting cities of the U. S., we supply 57 of them with more than 50 percent of their grapefruit. Most of the nine markets whose grapefruit are supplied chiefly by our competitors are in Texas and California.

We believe Florida producers have better advantage on the southern and eastern markets than the figures indicate; or, in other words, we believe that natural conditions are such that if we make certain changes in our supply, we could command a relatively more important place on more of these markets. Lengthening our present shipping season by changing to varieties which can economically be grown for summer production might do a lot in gaining a larger percentage of the sales of these markets.

## TEXAS AND FLORIDA GRASP HANDS IN CITRUS MARKETING

(Continued from page 8)

interests of the two states has given rise to confidence that Texas and Florida, and California and Arizona sooner or later, can successfully join hands in giving citrus marketing a foundation so broad and well built that the entire structure of the industry will be materially strengthened.



# Non-Arsenical Stomach Poisons for Grasshoppers and Beetle Control

W. L. Thompson

Grasshoppers, as a rule, are not a serious pest of citrus trees, especially trees over three or four years old. During the fall of 1931 they did severe damage in some orange groves in the central part of the State. Due to recent legislation prohibiting the use of arsenicals on citrus groves, except by special permission, it was necessary to make some tests of non-arsenical stomach poisons to control these pests.

The grasshopper doing the most damage was the "Bird Grasshopper", *Schistocerca americana*. It is rather long and slender, a powerful flier, and very active, especially on sunny days. It is evidently a sun-loving insect, as the trees were most severely damaged on the sunny side.

The grasshoppers used for the following experiments were collected from one of the infested groves. Wire screen cages 12 inches by 14 inches by 18 inches were used in the dusting, spraying, and a few of the bait tests. The majority of bait tests were made in cages of the above size but having no bottoms. In each test potted citrus plants were put into the cages, or the bottomless cages were placed over young citrus trees in the nursery. In almost every case the tests were started the day after the grasshoppers were collected.

**KALO**, a material made up of 96 per cent sodium silicofluoride, gave very good results when used in a bran mash. Kalo used at the rate of 3 pounds to 50 pounds of bran, 1 gallon of syrup, and approximately 10 grapefruit gave a 100 per cent kill in two to three days. A wire screen cage six feet square and six feet high was placed over a three year old orange tree and the above bait applied on the tree and ground. There were 80 grasshoppers used in this experiment. In three days 97.5 per cent of the grasshoppers were dead. The results of this experiment seemed to justify a field test.

## Test 52—Field Test

In the field test the following formula was used:

Kalo 3 pounds, Bran 50 pounds, 1 gallon syrup, 15 grapefruit, and water enough to make a stiff mash. This material was applied to four acres of Temple oranges about eight years old.

Approximately two large handfuls of bait was applied on and around the east and south sides of each tree, since the most damage was done there. Most of the grass and weeds had been killed by cultivation. This bait was applied between six and seven o'clock in the evening.

Before application of the bait an approximate average of thirteen grasshoppers would fly from the trees when the foliage was disturbed. After

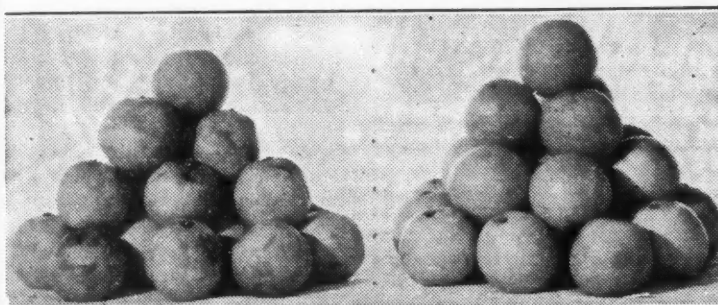
four and one-half days, observations were made to determine the effect of the bait. An approximate average of two grasshoppers per tree were observed, or about an eighty-four per cent kill. Many trees had no grasshoppers on them, the number ranging from zero to five per tree. A few dead hoppers were found under the trees, but due to the fact that so much dead grass was on the ground it was difficult to find them.

The far side of the same grove was used as a check, ten rows removed from the treated section. There was no decrease in the number of grasshoppers in this section of the grove during the four and one-half days.

The above observations were made

(Continued on page 24)

## After Three Weeks



Here are two piles of oranges, each treated to control decay and shrinkage. The pile at the left was treated with a competitive treatment claimed to be "just as good" as Brogdex. The pile at the right was treated with the genuine Brogdex treatment. These oranges were originally the same size, picked and packed the same day and came from the same district. Fruit was kept at room temperature and checked at various intervals. The record:

In 7 days Brogdex decay	1/2 of 1%	Competitive	34 %
In 14 days Brogdex decay	- 2 1/4%	Competitive	62 1/2%
In 21 days Brogdex decay	- 5%	Competitive	77 1/4%

Market buyers know that Brogdex fruit will keep and that fruit given substitute treatments will not. They have learned this from experience. That is why they watch for Brogdex brands and pay more for them.

When you go into a store and ask for a standard article and the clerk offers you something else which he claims is "just as good" you are at once suspicious, and rightly so, in most cases. No one bothers to imitate something that is no good—it is the article with a reputation that is copied. The substitute is rarely as good as the original.

There are many substitutes being used for Brogdex and all are claimed to be "just as good" but when tested side by side with the genuine Brogdex treatment the best of them are found to be of little value.

There is a Brogdex house near you. Brogdex invites investigation.

**FLORIDA BROGDEx DISTRIBUTORS, INC**

B. C. SKINNER, President

DUNEDIN, FLORIDA

# Some Facts Concerning the Activities of Florida State Marketing Bureau

By L. M. Rhodes, State Marketing Commissioner

During the fifteen years since the State Marketing Bureau was established, the records indicate that there has been produced in Florida, agricultural products with a total approximate value of \$1,750,000,000. A careful survey of the records of the Bureau indicate that in the preparation, distribution, sale or exchange of the agricultural produce of Florida during these fifteen years, the Bureau has touched in some beneficial way, approximately \$1,000,000,000 worth of them.

The Bureau has also assisted in the purchase, sale or exchange of farm implements, farm supplies, building materials, wood, lumber, moss, herbs, furs, fish and other seafoods, rabbits, pigeons, frogs, etc., with a total value amounting to not less than \$75,000,000.

Market News has been furnished since 1921 covering 98% of the productive area of the State from 9 different stations. Approximately 1,000,000 words per month are sent out giving marketing information on the Florida farm produce valued at from \$70,000,000 to \$100,000,000.

The Bureau began Federal-State Shipping Point inspection during the season of 1922-23, and since then has assisted in the inspection of 70,379 cars of fruits and vegetables.

## A Three Year Period

Since the 1929 Legislature enlarged the activities of the Bureau, between August 1st, 1929, and August 1st, 1932, the field workers, consisting of three marketing specialists and the Commissioner, have taken part in 1099 farmers' and shippers' meetings which had an attendance of 101,800 people. Visited 3981 marketing conferences, attended by 22,759 growers and shippers; delivered 962 radio talks. Assisted in 1,047 cooperative sales at which 1,524 cars of live stock, poultry, eggs, wool, syrup, hay, corn, etc., were sold for which cash was paid amounting to \$1,605,156.

In addition to these cooperative sales, these field men have assisted in selling from the office 2,868 cars of live stock for slaughter and breeding purposes, poultry, eggs, wool, syrup, corn, hay, pecans, and other miscellaneous products, valued at \$1,215,-

820; making a grand total of \$4,838,049.

## Other Office Activities

The Assistant Commissioner, Market News Specialist and office force have given special marketing advice and assistance on the preparation, distribution, and sale of 23,838 cars of fruit, valued at \$15,860,423; and in less than carlot shipments produce valued at \$5,485,929. Furnished market messages which were broadcast by 9 different stations, sent out by wire, phone, mail and radio, amounting to 31,582,736 words which were equivalent to 3,582,736 ten-word messages. This market news service has been available to every producer and shipper in the State.

This complete current daily market information is provided through the cooperation of the U. S. Department of Agriculture and has been available during these three years, on the sale of approximately \$300,000,000 worth of crops and livestock products.

We have advertised through the 'For Sale, Want & Exchange Bulletin' \$12,694,262 worth of farm implements and agricultural products, and \$9,294,647 worth of this amount has been sold or exchanged.

We have assisted in giving Federal-State shipping point inspection on approximately 24,000 cars of fruit and vegetables and collected claims

amounting to \$46,955.

## Activities During Months April, May, June, July, 1932

The Commissioner and Specialists have traveled 51,421 miles; visited 89 farmers' and shippers' meetings, attended by 8,945 people; took part in 784 marketing conferences, attended by 2,720 growers and shippers; delivered 121 addresses and 20 radio talks.

Assisted in setting up 7 new cooperative marketing organizations and reorganizing 3 old ones. Assisted in 40 cooperative sales at which live stock, poultry and eggs were sold which brought the growers \$13,813.

Sold from office by the Specialists: 238 cars of cattle and hogs, 13 pure bred heifers, 8 pure bred boars, and 50 pure bred bulls, 4 pure bred rams, 13 range calves and 20 dairy cows; 20,000 pounds of bacon, 4000 pounds of poultry, 495 cases of eggs, 561 cars of vegetables, grapes and sweet potatoes, and 17,000 pounds of pecans, 2 cars of syrup, which brought \$485,895.

Inspected and graded 1620 cases of eggs for market, valued at \$8604.00 making a total business transaction of \$494,499. Advised with officials as to the establishment of 4 wholesale farmers' markets and the building and equipping of 2 packing houses.

In addition to these field activities  
(Continued on page 26)

**"Black Leaf 40"**

**Kills APHIS and THRIPS**

This "double acting" insecticide has been the favorite spray material of successful citrus growers for the past 20 years. It not only kills Aphid and Thrips by direct contact, but also by nicotine fumes. This is an advantage not possessed by any non-poisonous, non-volatile insecticide.

## Recommended By Experiment Stations

"Black Leaf 40" enjoys the endorsement and recommendation of leading growers, Agricultural Colleges and Experiment Stations and editorial writers throughout the country. Being highly concentrated, this reliable insecticide is economical to use as a little goes a long way. Full directions appear on every package. Sold everywhere.

**Tobacco By - Products & Chemical Corporation**  
LOUISVILLE, Incorporated KENTUCKY

**KILLS BY CONTACT AND FUMES**





## PLANT RESEARCH YACHT

## LANDS LARGE CARIB-

## BEAN COLLECTION

(Continued from page 19)

pathologists and entomologists, and seeds and cuttings were fumigated or treated with hot water. Where deemed desirable, some of the plants, as well as cuttings, are to be grown under quarantine to make sure that this country is protected from any possible injurious insect or disease. The plants will be tested not only in the southern United States, but also in the various tropical possessions.

In addition to the collection brought back by the expedition, several shipments of seeds and cuttings were made from various islands by air express, permitting the landing of the material in the quarantine house at Washington within five days from the time it was collected in the tropical wilds.

The expedition brought back hundreds of herbarium specimens, 2,000 still photographs and 1,100 feet of motion picture film to complete the record of its activities.

The "Utowana" has been especially equipped by Mr. Armour for plant exploration work, and contains a spacious laboratory, with a forced draft for the seed and herbarium driers, Wardian cases in which to carry rooted cuttings and plants, a dark room, microscope benches and an excellent scientific library. Launches and other small boats provide for quick landings at all kinds of beaches and islands.

The expedition carried with it seeds, scions and plants of some of the newer plants growing in Florida and the lower South and these were presented to the proper authorities at the various places visited where they could be grown and tested under proper quarantine safeguards.

Mr. Armour received the Meyer Memorial Medal for Plant Introduction in 1931 for his long interest in and valuable contributions to plant introduction. In addition to the several voyages taken in the interest of plants, he also placed his ship at the disposal of the Department at the time of the Mediterranean fruit fly outbreak in Florida and took Prof. H. J. Quayle, entomologist of the University of California and collaborator of the U. S. Department of Agriculture, on a cruise of the Mediterranean countries so that Professor Quayle could study the insect at first hand and acquire new information that would be helpful in the eradication campaign in this country.

With the school season here, parents should be interested in good school lunches. The State Home Demonstration Department has a bulletin which will prove helpful. Write and ask for bulletin 49, or ask the home demonstration agent for it.

If you can't raise stable manure for your land grow it the vetch and Austrian pea way.

In sunny Florida a little Italian rye grass will keep the lawn green all winter. Sow it during October.

*For* **SWEETENING  
YOUR SOIL**

PACKED IN MOISTURE  
PROOF BAGS TO INSURE  
PROTECTION AND  
TO AVOID WASTE

*use*

**KAL-CITE**  
**A POTASH-CALCIUM MIXTURE**

**FOR CITRUS TREES  
USE  
COPPER KAL-CITE**

Especially designed for application to citrus trees. It is KAL-CITE with the addition of Copper Sulphate, the acknowledged splendid citrus tonic, and a slight rearrangement of the potash-bearing materials.

**HERE** is a product for sweetening your soil—a soil amendment and for soil acid correction. KAL-CITE is inexpensive. In applying it you use only half the quantity that would be required of hardwood ashes used for the same purpose. KAL-CITE produces sanitary and healthful conditions in the soil. Deliveries can be made promptly from stocks carried by our local dealer. KAL-CITE is a product made and sold exclusively by the manufacturers of

**IDEAL**  
*Fertilizers*

For detailed information and prices write Wilson & Toomer Fertilizer Company, Jacksonville, Florida, or call our local dealer.



..

Ideal Fertilizers are made up months in advance in order to become thoroughly seasoned and cured. Our tremendous facilities permit this extra margin of precaution, and successful growers know the advantages to be secured from aged and cured fertilizers over "fresh", "green" mixtures.

# NON-ARSENICAL STOMACH POISONS FOR GRASSHOPPER AND BEETLE CONTROL

(Continued from page 21)

from one to two-thirty o'clock in the afternoon when the grasshoppers were very active.

Sodium fluoride, used at the rate of 1 pound to 20 pounds of bran and 2 quarts of syrup, gave a 100 per cent kill in three days to four days. This combination gave better results than using 2 pounds of sodium fluoride to 20 pounds of bran, since a kill of only 90 per cent was obtained after six days. It is quite probable that 2 pounds of sodium fluoride per 20 pounds of bran, since a kill of only 90 per cent was obtained after six days. It is quite probable that 2 pounds of sodium fluoride per 20 pounds of bran is distasteful to the grasshoppers. Sodium fluoride, mixed with oat-meal and syrup, gave only a 40 per cent kill in six days. Sodium fluoride, as well as the Kalo, should be sifted through a fine screen be-

fore it is mixed with the bran as both of these materials are more or less lumpy.

Kalite, a dust containing 18 per cent sodium silicofluoride, gave a kill of 100 per cent in six days when the plants and grasshoppers were both dusted, but when only the plants were dusted, the kill was but 55 per cent in six and one-half days and ninety-nine per cent of the leaves were eaten off the plants. Kalite did not stick well on the citrus leaves, but in a mixture of 3 parts of Kalite to 1 part of Talc, the adhesive quality seemed to be improved. Two different tests were made by placing five grasshoppers under a small wire screen and dusting Kalite over them and on the boards where they had to crawl. No food was under these screens. After 48 hours all the dusted grasshoppers were dead and in the checks, none.

It is quite evident from these results that this material, applied as a dust, should come in contact with the

grasshoppers to insure a good kill. In cleaning their appendages they no doubt swallowed some of the poison which is probably the reason for the high per cent of kill when both grasshoppers and plants were dusted. It might be well to note here that when rose chafers were dusted with Kalite, the kill was 40 per cent higher when both the beetles and plants were dusted than when the plants alone were dusted.

(Continued next issue)

## FOUR MORE 4-H CLUBS QUALIFY FOR CHARTERS

Four more Florida 4-H clubs recently received their charters from the Secretary of Agriculture as Standard 4-H Clubs, according to announcement by R. W. Blalock, state boys' club agent, Gainesville. These clubs are located at Hampton and Brooker, in Bradford County, and at Little Springs and Johnstown, in Union County.

# The Electric Fruit Marking Machine

## SIZES

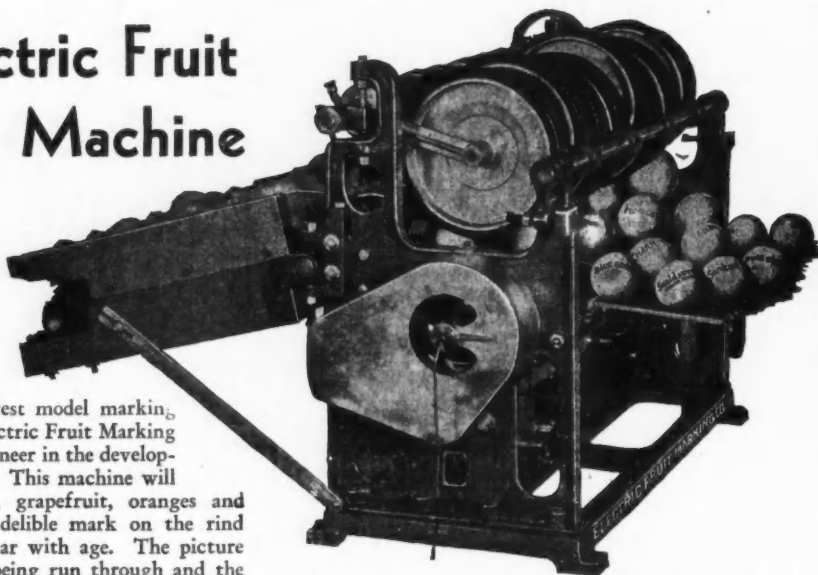
- 4-run ( 4 car capacity)
- 6-run ( 6 car capacity)
- 8-run ( 8 car capacity)
- 10-run (10 car capacity)

## Self Adjusting for Size Variation

This is a picture of the newest model marking machine, a product of the Electric Fruit Marking Machine Co. of California, pioneer in the development of marking equipment. This machine will handle, without adjustment, grapefruit, oranges and tangerines, imprinting an indelible mark on the rind that will not fade or disappear with age. The picture shows several sizes of fruit being run through and the way each size is accommodated by the self adjusting guide wheels.

The weight of the grooved wheel holds the fruit at the time of imprinting the mark and no greater pressure is exerted on the large size fruit than on the small so no injury results to either.

The imprinting dies are electrically heated, are inked by a continuous ribbon and the mark is branded into the rind of the fruit, the heat on the die drying the ink so it will not smear.



All sizes may be furnished with either constant or variable speed motors.

Regardless of how attractive your labels and wraps may be or how fine a pack you may put up, the consumer rarely ever sees anything but the fruit itself. Your private mark identifies your brand, popularizes it in the minds of the consumer which stimulates sales and increases profits all along the line.

Descriptive circular sent upon request or we will be glad to have our representative call.

## FLORIDA CITRUS MACHINERY COMPANY

DIVISION FOOD MACHINERY CORPORATION

B. C. SKINNER, Pres.

DUNEDIN, FLORIDA

## LYONS FORECAST 1932-33

FLORIDA CITRUS CROP  
TO BE 19,800,000 BOXES

(Continued from page 5)

presents 13,330 carloads, or 13.7 per cent of the total United States orange supply. The survey which extended over 44 weeks, included drug stores, luncheonettes, confectionery stores, 5 & 10 cent stores and fruit and drink stands located in six representative cities of the country.

"Lemons consumed by fountains in 1931 totaled 283,341,600 or 15.5 per cent of the total United States lemon supply, computed on the basis of 300 to the box or 2,714 carloads.

"During the past five years, sales of fresh orange and lemon drinks have increased 68.2 per cent. Out of every six drinks sold over fountains equipped with Sunkist extractors, one is a fresh fruit orange or lemon drink, which means that 16.6 per cent of all drinks sold are made from fresh oranges or lemons.

"Careful checking on costs and gross profits show that the largest profits are derived from fresh fruit drinks. Ice cream sodas show a profit of 58 per cent, carbonated beverages 65 per cent, sandwiches 53, salads 65, while orange juice drinks bring a gross profit of 74.8 per cent."

In summing up the citrus industry and in spite of the obstacles we have had to overcome, and some have been of our own making, the citrus industry is sometime in the near future destined to be the most profitable in the states growing and marketing citrus fruit. The growers of citrus are not to be compared with the farmers and growers of states further north, that produce other farm commodities, because outside of these states, all commodities raised in the north can be grown with few exceptions, anywhere in the United States. But how different the picture is of the citrus industry; Florida, California and Texas virtually hold the monopoly of the production of citrus fruit; and of course, when one has a monopoly of any one commodity, the consumer will pay a quite satisfactory price to the grower or manufacturer as the case may be.

But we, in the citrus industry, have failed to take advantage of this monopoly that is in the palm of our hands, so this is why I make the statement that the citrus industry is bound to be profitable when certain objections are removed. I would like to reiterate the statement I made last year with reference to the overproduction if there ever has been

any in grapefruit or tangerines in Florida. The true facts are with a few exceptions that we never have done very much about promoting the sale of these two products. The exceptions apply to several marketing agencies in the state who have promoted the sale of grapefruit and tangerines.

In conclusion, will say, that I am a Bull on Florida and particularly the citrus industry, and that the day is not very far distant when this improvement that I speak of will be brought about for the full benefit of the citrus grower and the state,

FLORIDA JERSEY MAKES  
GOOD OFFICIAL RECORD

Gainesville, Fla.—To place herself among the South's leading Jerseys, Sophy's Majesty Heiress at the Florida Experiment Station dairy herd has just completed a 365-day Register of Merit record, producing 10,022 pounds of milk and 535.49 pounds of butterfat.

She was milked twice daily and otherwise treated as an ordinary dairy cow, according to Dix Arnold, in charge of the herd. There are now 13 Register of Merit cows in the Station's herd of 34. Seven heifers and four older cows are now on test.

A FREE BOOK  
EVERY GROWER  
AND SHIPPER  
SHOULD HAVE

CONTAINS complete information on ETHYLENE—the magic gas which hastens ripening of matured fruits. Learn how to profit with it. Ethylene increases profits, reduces loss, saves time. Write for your copy of "Ethylene for Coloring Matured Fruits and Vegetables" today.

## CARBIDE AND CARBON CHEMICALS CORPORATION

30 East 42nd Street, New York City

1310 Santee Street, Los Angeles

114 Sansome Street, San Francisco, California

Warehouses in Los Angeles, Tampa, Jacksonville,  
and other principal citiesUnit of Union Carbide **UCC** and Carbon CorporationThe Best Market  
In Florida

Is made up of the citrus growers of this state.

The logical medium through which to appeal to this group is

## The Citrus Industry

because it is addressed solely to this group of readers.

A lot of advertisers have already learned this.

—A trial will convince you of the wisdom of this course.

## CLASSIFIED

## Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

## MISCELLANEOUS

**DUSTER** — Niagara, Air-Cooled engine Steel truck-mounted. Nearly new. Half price. Samuel Kidder, Monticello, Fla.

**SEEDS—ROUGH LEMON, SOUR ORANGE, CLEOPATRA.** Pure, fresh, good germination. Also seedlings lineout size. De Soto Nurseries, DeSoto City, Fla.

**FANCY ABAKKA** pineapple plants. R. A. Saeger, Ankona, Florida.

**HIGH BLOOD PRESSURE** easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

**CROTALARIA SPECTABILIS**—Seed for sale. New crop, well cured, bright and clean. Price 25c per pound in 100 pound lots and over, 30c per pound in less quantities. f. o. b. Hastings, Bunnell, Lowell and San Antonio, Florida. F. M. LEONARD & COMPANY, Hastings, Florida.

**SCENIC HIGHWAY NURSERIES** has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

**RAISE PIGEONS**—Profit and pleasure. Illustrated descriptive catalogue postage six cents. Vrana Farms, Box 314a, Clayton, Missouri.

**ORANGE PACKERS ATTENTION** — Two chemical transparent flexible orange coating processes for sale; royalty or license basis. Patent pending. Dr. C. V. Berry, 251 West 111th Street, New York City.

**PUREBRED PULLETS FOR SALE**—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

**LAREDO SOY BEANS**, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

**CABBAGE and Collard plants.** All varieties now ready. Postpaid 500-\$1.00; 1,000-\$1.50. Expressed \$1.00 per 1,000. Write for prices on large quantities. Satisfaction guaranteed. P. D. Fulwood, Tifton, Ga.

**NEW COMMERCIAL lemon for Florida**, the Ferrine; proven. All residents need yard trees. Keeping Florida money at home. Booking orders for budded stock for Winter delivery. DeSoto Nurseries, DeSoto City, Fla.

**WANTED**—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

**SATSUMA BUDWOOD** from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

**SEED**—Rough lemon, sour orange, cleopatra. New crop from type true parent trees. Also thrifty seedlings. DeSoto Nurseries, De Soto City, Florida.

**WANTED**—To hear from owner having good farm for sale. Cash price, particulars, John Black, Chippewa Falls, Wisconsin.

## SOME FACTS CONCERNING THE ACTIVITIES OF THE FLORIDA STATE MARKETING BUREAU

(Continued from page 22)

of the Commissioner and Marketing Specialists, Assistant Commissioner, and other office force rendered the following service during April, May, June and July: Gave special marketing advice and assistance on 1984 cars of fruits and vegetables valued at \$1,075,070. Assisted in marketing poultry and eggs valued at \$3750. Supplied list of dealers in fruits, vegetables, live stock, poultry, corn, moss, roots, herbs, flowers, frogs, rabbits, fish, seafoods, etc., to 199 growers and shippers. Collected or adjusted claims for 101 shippers and growers, amounting to \$4,555. Advised 38 growers and shippers as to filing claims for violation of the Perishable Agricultural Commodities Act; advised 64 shippers as to crop

SEND no money. C. O. D. Cabbage and Collard plants. All varieties. 500—60c; 1,000—95c. Standard Plant Co., Tifton, Ga.

C. O. D. Frostproof cabbage and collard plants. All varieties. 500—60c; 1,000—95c. Farmers Plant Co., Tifton, Ga.

**BUDDED trees** new Florida commercial lemon, proven, thin skinned, juicy, scab immune. Also rough lemon, sour orange and Cleopatra seed and liningout seedlings. DeSoto Nurseries, DeSoto City, Fla.

data and general sales outlook; supplied complete miscellaneous information to 56 growers.

Distributed special market information of growers and shippers; sent out during April, May and June approximately 3,000,000 words in Market News from 9 stations covering 98% of the productive area of the State.

Advertised in the 'For Sale, Want & Exchange Bulletin' approximately \$4,500,000 worth of farm produce and agricultural implements and not less than \$1,300,000 worth was sold or exchanged; several thousand marketing bulletins, and rendered numerous other services which space forbids us to mention.

Poultrymen interested in keeping an accurate set of simple records on their birds next season should get in touch with their county agent or write Norman R. Mehrhof, extension poultry specialist, Gainesville, Fla.

More than 90,000 trichogramma parasites, wasp-like insect that helps control the cane borer, have been distributed in Palm Beach County this season, reports M. U. Mounts, county agent.

## "JACKSONVILLE'S LEADING HOTEL"



## THE SEMINOLE

CHAS. B. GRINER, Manager

Caters especially to the fathers and mothers, sons and daughters of the South. YOUR hotel—and THE hotel for your family. — Absolutely Fireproof and Modern.

RATES, \$1.50 UP.

FREE GARAGE

## HOTEL HILLSBORO

(Tampa's Largest All Year Hotel)

INVITES YOU TO USE ITS FACILITIES

"TOP O' THE TOWN" Dining Room  
COFFEE SHOP

CAFETERIA

Large Rooms  
Single With Bath  
\$2 to \$5  
Double With Bath  
\$4 to \$7

L. B. SKINNER, Prop.

C. J. JACKSON, Mgr.